

REMARKS

Claims 1-12, 14, 18, 20, 22, 24-30 and 32 have been previously canceled. Claim 13 is currently amended and no new claims have been added or canceled by way of this response. Thus, claims 13, 15-17, 19, 21, 23 and 31 are currently pending and presented for examination. Applicants respectfully request reconsideration and allowance of the pending claims in view of the foregoing amendments and the following remarks.

Response to Rejections Under Section 103:

Claims 13, 15-17, 19, 21, 23 and 31 stand rejected under 35 U.S.C § 103(a) as being obvious over Hendengren et al. (USPN 5,389,876).

Applicant's claim 13 recites in part:

... a **flexible** rear layer comprising a **ferrite particle material** that at least partially covers and contacts the signal coil and the excitation coil ... ferrite particle material extends over a **thickness of about 200-600 microns** [emphasis added]

Applicant's claim 23 recites in part:

... a rear layer comprising a **flexible** curable material encapsulating **ferrite particles** ... flexible curable material extends over a **thickness of about 200-600 microns** [emphasis added]

Applicant's claim 31 recites in part:

... a plastically **deformable ferrite powder** encapsulation material... the encapsulation compound extends over a **thickness of about 200-600 microns** [emphasis added]

In the instant Office Action, the Examiner contends that Hendengren et al. teaches "a flexible rear layer (11) comprising a ferrite material that at least partially covers and contacts the signal coil ... (col. 8, lines 51-66) ..." and "... a rear layer (11) comprising a flexible curable material encapsulating ferrite particles ... (col. 8, lines 51-66) ..." Applicants disagree, and respectfully submit that a proper reading of the cited passage of Hendengren et al. does not teach the use of ferrite particles. Specifically, the cited passage discusses a steel or ferrite

support carrier ... to support flexible substrate 11 throughout (HDI) processing in order to avoid shrinking, wrinkling, etc. ... [that is] adhesively laminated to the support carrier ... permitting easy removal of the flexible substrate 11 from the support carrier after HDI processing (col. 8, lines 51-66).

The steel or ferrite support carrier is intended to provide support, and therefore be sufficiently rigid “in order to avoid shrinking, wrinkling, etc.” Claims 13 and 23 recite “**ferrite particles**” and claim 31 recites “**ferrite powder**,” all of which are in a **thickness of 200-600 microns** (0.0002 inch to 0.0006 inch). Applicants submit that a layer of ferrite powder or particles can not provide any structural support due to the fact the material is a powder or particle, therefore the support carrier of Hendengren et al. does not teach or suggest “**ferrite powder**”, or “**ferrite particles**” as recited in claims 13, 23 or 31. Moreover, the claimed layer of ferrite powder or particles is only **200-600 microns thick** (0.0002 inch to 0.0006 inch) is extremely flexible due to the micro-foil like thinness of the layer coupled with the fact that the layer is a powder as discussed above. Therefore the rigid support carrier of Hendengren et al. can not teach or suggest the claimed thickness of “**ferrite powder**” or “**ferrite particles**” recited claims 13, 23 or 31.

Furthermore, the prior art support carrier is clearly intended to provide **temporary** structural support to the flexible substrate during processing, such as a piece of tooling, and therefore must be arranged on the measurement side of the flexible layer, opposite the side the sensing elements are to be deposited during processing. Therefore, the support carrier can not be the “rear layer” of claims 13 and 23 or the “encapsulation material attached to the second surface of the flexible sheet and/or to the single layer of the electrical coil” of claim 31.

In light of the above discussion, Applicants respectfully submit that the Hendengren et al. can not teach or suggest Applicants claimed invention and therefore the Examiner has failed to establish a *prima facie* case of obviousness. Furthermore, claims 15-17, 19, 21 are also patentable based at least in part on their dependence from claim 13 as well as on their own merit, and respectfully request the Examiner withdraw the Section 103 rejections.

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Conclusion

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, Applicants respectfully request that the Examiner enter the present amendment, reconsider the rejections, and timely pass the application to allowance. All correspondence should continue to be directed to our below-listed address. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including fees for additional claims and terminal disclaimer fee, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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